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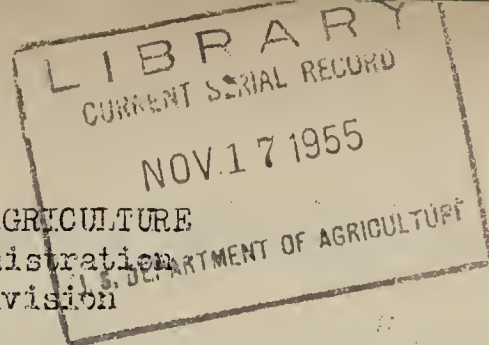
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UNITED STATES DEPARTMENT OF AGRICULTURE

Rural Electrification Administration

Telephone Engineering Division



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## Telephone Engineering Newsletter

Newsletters are intended to provide a means of answering questions that arise in the field and to advise the field of new developments. They are not intended to be instructions nor to replace in any respect the presently-approved channels for establishing requirements and procedures. Suggestions for subjects will be gladly received.

### Polyethylene Covered Line Wire

An installation of one bare and one covered line wire has been arranged for with the Dickey Rural Telephone Company, North Dakota 519. The polyethylene covered wire will be .109 steel for one circuit and .080-30 percent extra high strength Copperweld for another.

Negotiations are under way for the installation of two circuits composed of about five circuit miles of .109-135 grade steel and five circuit miles of the .080-30 percent Copperweld wire. Both wires will be insulated with polyethylene in this case. A new configuration will be used in which the separation between the two wires of the pair will be four inches. Sets of aluminum armor rods will be applied over the insulation at the attachments to crossarms which will be by means of clamps over the armor rods, with bolts through the clamps and the crossarms. Transpositions will be made point type by clamps, one above another, mounted on a metal plate similar to that used in a tandem bracket. A major advantage of having both wires of a pair insulated at points of attachment is that in wet weather leakage will be only slightly less than in dry weather, which will extend the range of a circuit for voice current, ringing, and direct current (for dialing and supervision). The plan involves several other advantages and the results may be found to justify the use of this insulation for long-span construction.

### Demonstration of Method for Welding Plastic Sleeves to Plastic Sheathed Cable

The Ansonia Wire and Cable Company has offered to demonstrate the welding method for splicing plastic sheathed cable where this type of splicing is used involving Ansonia cable. In this procedure the plastic sleeve is welded to the plastic sheath of the cable by means of a heat gun which obtains its power from a portable gasoline engine-driven generator. Arrangements for such demonstrations should be made with the contractor before splicing operations are scheduled to begin.

### Tying Line Wire on Point Type Transposition Brackets

Newsletter No. 5 dated September 30, 1954, mentioned that abrasion of insulator glass and line wire was reported from the field. Investigation in the field demonstrated that this abrasion occurred in the operation of placing the line wire in the insulator grooves and that further abrasion was most unlikely. However, the point type transpositions will be observed again later to see if any further abrasion has occurred. At this time, tying of point-type brackets is not recommended as being necessary.

### Customer Toll Dialing

Several loan applications have been received for the purchase of customer toll dialing equipment of a type which looks attractive for some REA-financed telephone systems. The proposed systems, involving limited networks, operate in one of the following manners:

- (1) The customer is required to dial a one, two, or three digit toll-access code, his own number and the called number.
- (2) The customer is required to dial a one, two, or three digit toll-access code, the last digit of his own number and the complete called number.

A recent inspection of an installation in Idaho, similar to system (1) above and operated by the General Telephone Company, indicates that the method is financially attractive and well liked by the toll users. Customer toll dialing is most likely to be justified on REA-financed systems where there is an appreciable amount of inter-office toll traffic. The alternative methods of handling the inter-office traffic in such cases involve operator handling at the toll center, or the establishment of extended area service. These are likely to be more costly and less desirable from a service standpoint than customer toll dialing. A section of the Telephone Engineering and Construction Manual covering the subject is now in preparation.

### Bureau of Standards Assistance

Arrangements are under way with the Bureau of Standards for making vibration tests on various methods for tying line wire to insulators, or on any other apparatus or devices on which REA may desire vibration tests.



Radio Subscriber Line Circuit Installation

The installation of Raytheon radio equipment between Wausaukee and Chalk Hills, Wisconsin, has been in service since September with no interruptions to service from any cause. The equipment provides two channels, one for each of the two ten-party lines served by it from the Wausaukee dial office which is a Leich Electric Company dial installation.

Revision of DS-T-10R2

The committee reviewing the revised issue of DS-T-10 (to be REA Form 511) has completed its work and arrangements for printing are now under way. Copies of the completely revised text will be available at the interim conference.

FE-14, REA Specification for Thermoplastic-insulated, Thermoplastic-sheathed Cables

REA Specification FE-14 originally issued about a year ago has been revised and reissued under date of November 1954. Experience with plastic-insulated plastic-sheathed cable indicated need for changes and additions which involve better shielding, improved capacity unbalance limits, higher voltage breakdown requirements and limitation as to the number of defective pairs permitted in new cable.

PC-3, REA Standard for Straight Splicing Thermoplastic-insulated, Thermoplastic-sheathed Cable to Paper-insulated, Lead-sheathed Cable

REA Standard, PC-3, has been issued under date of November 1954. The specification based on experience includes an important requirement for a moisture block on the plastic cable and of a splice which is to prevent moisture from entering the paper-insulated cable from the plastic cable.

List of Materials Acceptable for Use on Telephone Systems of REA Borrowers

The List of Materials is scheduled for reissue in January, 1955, to bring it up to date.

Drop Wire Clamp Bail Abrasion

Reports from some areas in the field indicate that abrasion is occurring on the bails of drop wire clamps when the drop wire clamp is attached to a drive hook. At the present time, methods for reinforcing the bail are being investigated. One method for minimizing the trouble is by inserting a hard copper-bronze grommet in the bail. The grommet then makes contact with the drive hook and since it can rotate around the hook it should distribute the abrasion and give increased life to the clamps even where vibration is severe. To insert the grommet the bail wires are spread, the grommet is slipped in and the bail wires are pressed together to hold the grommet in place.